



Review of "Sex Itself: The Search for Male and Female in the Human Genome."

Citation

Haig, David. 2014. Review of "Sex Itself: The Search for Male and Female in the Human Genome," by Sarah S. Richardson, Chicago (Illinois): University of Chicago Press. *The Quarterly Review of Biology* 89 (4) [December]: 399–400. doi:10.1086/678648.

Published Version

doi:10.1086/678648

Permanent link

<http://nrs.harvard.edu/urn-3:HUL.InstRepos:25060490>

Terms of Use

This article was downloaded from Harvard University's DASH repository, and is made available under the terms and conditions applicable to Open Access Policy Articles, as set forth at <http://nrs.harvard.edu/urn-3:HUL.InstRepos:dash.current.terms-of-use#OAP>

Share Your Story

The Harvard community has made this article openly available.
Please share how this access benefits you. [Submit a story](#).

[Accessibility](#)

SEX ITSELF. *The Search for Male and Female in the Human Genome.*

By Sarah S. Richardson. Chicago: University of Chicago Press. \$45.00. vii + 311 p.

Sarah Richardson is a historian of science who has written an engaging history of sex chromosome research. *Sex Itself* begins with the discovery of “accessory chromosomes” in the late nineteenth century and describes their subsequent re-labelling as “sex chromosomes” at the beginning of the twentieth century. She describes how this research has been transformed by advances in technology; from cytogenetics to gene sequencing to modern genomics. Throughout, she brings a gender-critical perspective to her subject, drawing attention to the ways in which stereotypical female characteristics have been repeatedly ascribed to the X chromosome, and male characteristics to the Y, despite strong reasons for scientific skepticism. She suggests science would be better served by reverting from ‘sex chromosomes’ to older less-gendered names such as ‘accessory’ or ‘heterochromosomes.’

In her discussion of the race to identify the male-determining gene on the Y chromosome and the subsequent appreciation of a more complex reality, Richardson suggests that the feminist analysis of gender contributed to the eventual downfall of the androcentric “master gene” model of sex determination and its replacement by a more interactive view. Jennifer Graves and David Page are cast as protagonists in this struggle with Graves leading the assault on Y-chromosomal pretensions and Page defending the honor of his much maligned chromosome. As Richardson notes, both Graves and Page are hams. Probably neither intended their extravagant prose to be taken too seriously.

Sex itself conforms to much recent History of Science by identifying influences of established ideologies on the conduct and conclusions of science. Such influences undoubtedly exist but should not be oversold. Scientists and historians will always have ideological biases and use language that reflects these biases, especially when attempting to communicate to a wider audience, but experimental findings do matter and many scientists regularly question their own assumptions because they want to be right and to be first. Suppose that women had been XY and men XX (female heterogamety), as occurs in birds and butterflies, or women had parents of both sexes but men only had mothers (haplodiploidy), as occurs in ants and bees. No matter the mechanism, sex determination would have been discussed in similar gendered terms that reflected popular ideologies of sex differences but the mechanism still matters.

Sex itself begins with biologists studying diverse organisms—Nettie Stevens studied the accessory chromosomes of grasshoppers—but then switches to an almost exclusive focus on human sex chromosomes. This organization reflects Richardson’s own interests but also a sharpening of focus of mainstream

biology during the twentieth century. As late as 1909, T. H. Morgan wrote on sex determination in phylloxerans, aphids, mosses, and ferns. Soon after, students in his laboratory found the first X-linked gene in *Drosophila* and his work shifted to the new 'model organism'. Much has been gained from a narrowing of focus to a few well-behaved species but a critical perspective has been lost. Jennifer Graves challenged simplistic theories of sex determination not only because of her gender-critical insights but because she studied kangaroos.

DAVID HAIG. *Organismic & Evolutionary Biology, Harvard University, Cambridge Massachusetts.*